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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/640,620

08/12/2003

Arra E. Avakian

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EXAMINER

VU, TUAN A

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/640,620

Applicant(s)

AVAKIAN ET AL.

Examiner

Tuan A. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/12/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the application filed 8/12/2003.

Claims 1-20 have been submitted for examination.

Specification

The disclosure contains some information that requires updating as following: in the RELATED APPLICATIONS section, pg. 1, from top to bottom, the four referred to copending applications (i.e. Dockets No. 10017135-1; 200311221-1; 10017133-1; 10017138-1) have currently been filed and are identified as Appl. Docket Number 10/640,626; 10/640,619; 10/640,625; and 10/640,623 respectively. Further, these same references mentioned again in page 45 are to be upgraded accordingly.

Appropriate correction is recommended.

Claim Objections

2. Claim 20 is objected to because of the following informalities: there is an extraneous 'to' between 'including a' and 'top level' (line 2); and there is some typographical error in 'top level transition' (line 2) and 'top level transation'(line 5).
3. Further, in claim 1 or 20, the use of a 'parent' term (cl. 1, line 7; cl. 20, line 5) needs to be contextually more specific as it should be semantically connected to a transaction; so to obviate an antecedent basis issue when the recited 'parent transaction' is referred to. Appropriate correction is required.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection

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is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 6, 20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 7 of copending Application No. 10,640,623 (hereinafter '623). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following conflicts in the respective applications.

As per instant claim 6, '623 claim 7 also recites a method for monitoring performance in a hierarchical parent-child transaction (re '623 claim 6) comprising instrumenting a bytecode representation of a function in said parent-child transaction without modifying instructions associated with execution of said function, generate a ARM agent to generate a start time and stop time markers of said function (re '623 claims 4-5) in a record for storing the response time of said function, utilizing said start and stop markers (re '623 claim 6) to determine a response time of said function. Even though '623 claim 6 does not recite generating correlator for identifying a top level parent transaction and utilizing it to cross-correlate performance metric of

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a parent transaction with one such metric of one child transaction, '623 claim 7 recites identifying a parent or a top level in the parent-child chain, and storing a record corresponding to said monitored response time (re '623 claims 5, 7); hence, it would have been obvious for one skill in the art to make the above record into a correlator type of record so that a performance metric like a response time --based on the start time and stop time markers -- in such record can be utilized to cross-correlate the performance of the parent and the child in the monitoring method to measure a response time of said parent-child transaction, which is exactly what is purported from the outset. Further, the bytecode instrumentation and registration of ARM agent teaching of claim '623 provides a Java application service where the J2EE server context would have been obvious.

As per instant claim 20, '623 claim 7 also discloses instrumenting function instructions of a hierarchical chain of parent-child transaction including a top level transaction and a child transaction without modifying source code associated with said transaction, and generating record to relate performance time of said top level with respect to its parent-child chain; but '623 does not mention that such record is for correlators. However, the record to contain correlators so to correlate the performance of a top level relative to a child level in the above chain in terms of response time has been rendered obvious as set forth above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The Federal Circuit has recently applied the practical application test in determining whether the claimed subject matter is statutory under 35 U.S.C. § 101. The practical application test requires that a “useful, concrete, and tangible result” be accomplished. An “abstract idea” when practically applied is eligible for a patent. As a consequence, an invention, which is eligible for patenting under 35 U.S.C. § 101, is in the “useful arts” when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The test for practical application is thus to determine whether the claimed invention produces a “useful, concrete and tangible result”.

As per claim 20, this claim recites computer medium storing instructions for instrumenting a runtime chain of transactions without modifying source code associated with these transactions and for generating correlators that identify top level transaction and parent corresponding to its transaction. As recited, there are stored instructions for a purpose of instrumenting and creating correlators. The claimed medium is not recited in coexistence with an executing computer operable to realize the functionality of the instructions thus stored; that is, the instructions as recited amount to mere descriptive functionality with an intended use, for it is unclear that such functionality can be realized via hardware execution for the intended functionality (*instrumenting, generating* correlators to identify) to actually yield some real-world computer results, results being concrete and useful within some executing application. In short, intended functionality claimed along with media without reasonable teaching of hardware to actualize (via some action being performed) would amount to non-practical application. The claim fails to provide ‘useful, concrete and tangible result’ and is rejected for leading to non-statutory subject matter.

Claim Rejections - 35 USC § 102

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8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Aman et al.,

USPubN: 2004/0220947 (hereinafter Aman).

As per claim 20, Aman discloses a computer readable medium for storing instructions for instrumenting at run-time (e.g. *dynamically, ARM, API, instrumentation interfaces* - para 0126-0128, pg. 7-8; Fig. 4, Fig. 12) a hierarchical chain of parent-child transactions including a top level transition and at least one child transaction thereof (e.g. Fig. 26; para 0021-0024, pg. 2) without modifying source codes (e.g. Fig. 4 – Note: dynamic insertion of API call via ARM services reads on without modifying source code of transactions – see Fig. 12) associated with these transactions and for generating correlators for each of said transactions (e.g. correlator -Fig. 26; para 0135-0136, pg. 8), wherein each correlator identifies said top level transaction and a parent, if any, corresponding to its associated transaction (e.g. Fig. 26; para 0021-0024, pg. 2).

10. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Labadie et al,

USPubN: 2003/0195959 (hereinafter Labadie).

As per claim 1, Labadie discloses a server system method for monitoring performance of a plurality of transactions including a top level transaction and plurality of transactions relating to said top level transaction in a child parent hierarchy (e.g. Tivoli ARM ... International

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Business Machines - para 0005-0014, pg. 1-2; para 0036, pg. 4; *event originated; event that triggered the particular event* - para 0045-0052, pg. 4-5 – Note: ARM and Tivoli correlators reads on parent/child transaction correlators with associated measurements via API, correlation that identifying originating or triggering events/host name), comprising

for each of selected ones of said transactions, instrumenting said transaction at run-time without modifying its source code (e.g. Fig. 4A-C- Note: Middleware instrumenting of live events and transaction threads reads on without modifying corresponding web code) to obtain a performance metric corresponding thereto (e.g. para 0061, pg 5; Fig. 5A, 5B),

for each of said instrumented transactions, generating a correlator for identifying said top level transaction and a parent (Note: ARM correlator reads on child/parent relationship), if any, of said transaction, and

utilizing said correlators to cross-correlate a performance metric corresponding to a parent transaction with one or more performance metrics corresponding to one or more child transactions of said parent transaction (e.g. Fig. 5B; *SOAP parameters, timestamp* – para 0073, pg. 7; Fig. 6A-C).

Labadie specifies that the server system is a EJB server with applications (para 0026, pg. 3) involving Sun Microsystems Enterprise beans; hence has disclosed that this server system is a J2EE because of the transaction-related ARM services and instrumentation on EJB Java objects (see Fig. 6A-C).

As per claim 2, Labadie discloses the step of instrumenting said transaction comprises inserting instrumentation code in a bytecode representation of said transaction (byte stream – para 0072, pg. 6).

As per claims 3-6, Labadie discloses wherein said performance metric corresponds to a response time of said transaction (*response time* - para 0005-0014, pg. 1-2); wherein said instrumentation code effects generation of a start time marker upon start of execution of said transaction and generation of a stop time marker upon completion of execution of said transaction (para 0068, pg. 6); wherein said instrumentation code generates calls to an Application Response Measurement (ARM) agent to cause generation of said stop and start time markers (service 350 – Fig. 5B; para 0005-0014, pg. 1-2) utilizing said start and stop time markers to measure a response time of said transaction (Fig. 5A, 6A).

As per claim 7, Labadie discloses generating a record for each instrumented transaction upon completion of said transaction, said record indicating said performance metric associated with said transaction (Fig. 5A-B), a parent of said transaction, and said top level transaction (Note: for each byte stream being instrumented for a ARM code instrumentation as disclosed, the top level or correlated event being monitored reads on parent or top level transaction – see para 0045-0052, pg. 4-5).

As per claim 8, Labadie discloses transmitting said transaction record to an analysis and presentation module (e.g. *PushCorrelator*, *GetAllCorrelator* - Fig. 6B; *Set_Context_Data*, *Set_Context_Info* - Fig. 6A, B; *CorrelatorTableEntry* 390 – Fig. 5B).

As per claims 9-10, Labadie discloses storing of said correlators in a thread local storage stack (e.g. Fig. 4A-C - Java Virtual Machine runtime thread with Thread counter reads on thread stack in JVM, stack being inherent to a JVM runtime as evidenced by *PushCorrelator*, *PullCorrelator* – Fig. 5B) in case of execution of said hierarchical transactions in a single thread (para 0037-0045, pg. 4); and storing said correlators in the stack based on a LIFO protocol (see

Fig. 4A-C - Note: Java Virtual Machine runtime stack for threads recording with inclusion of associated correlators therein at runtime, reads on LIFO protocol of a given stack).

As per claim 11, Labadie discloses removing a correlator from said stack upon completion of a transaction associated with said correlator (*PullCorrelator* – Fig. 6B).

As per claim 12, Labadie discloses wherein said top-level transaction is initiated in response to a request received from a web server (e.g. *Init_Correlator* – Fig. 6A- Note: any partner event in the flow of threads – see Fig. 4A-C- reads on a top thread leading to other thread downstream based on the first request and *Init* – see *InitClientMWare* –Fig. 6A, in light para 0034, pg. 4).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labadie et al, USPubN: 2003/0195959 (hereinafter Labadie), and further in view of Hind et al, USPN: 7,003,565 (hereinafter Hind).

As per claims 13-14, Labadie does not explicitly disclose wherein said web server transmits a cookie to said application server together with said request; and further utilizing said cookie to generate said top level correlator. But the client state being collected and passed (see Fig. 5A-B) over to different servers (plug-in middleware, DCS correlator service) using the

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instrumentation service (ARM) to record correlator as shown by Labadie (see para 0028-0032, 0034-0036) entail client runtime data/events to be passed from services to services to enable correlation of thread or partners being enumerated for a process request or analysis thereof(see Fig. 4A-C). The use of cookie at a given machine to store client data for repeated usage – so to obviate creation of additional discovery resources -- was concept used in the data collecting paradigm by Hind so that by using these record or cookie under the provision of message as to communicate with servers (see Fig. 3A; correlator – col. 8, lines 20-67) Hind's collection of correlator-type of data can support service as to improve QoS delivery or administrative policy enforcing. Hence, in the same endeavor as analyzing performance of transaction as Labadie, Hind provides in-bound and out-bound message with cookie data so to provide very specific client data for server to enforce quality control transaction using correlation information therein (see Fig. 6) thus to alleviate dependency of information interchanges from many sources of data providers (or linked servers) as cookie messaging can yield latest state of client information. Hence, in view to the multiple agent messaging as required in Labadie's correlator record passing, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide cookie messaging by Hind, i.e. using said cookie data to implement or to support correlator data collection as purported by Labadie. One skill in the art would be motivated to do so because cookie data from one sending edge server to the next would alleviate extraneous discovery resources for these data reflect the most accurate and dynamic state of the client information being passed (see Hind, col. 16, bottom to col 17 line 34) such that by utilizing this cookie approach, the servers can make use of the most up-to-date state of a client/requesting source data to fulfill the quality of transaction as approached by Labadie's

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instrumentation service, or to facilitate the enforcement of transaction security as endeavored by Hind's Qos paradigm.

13. Claim 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labadie et al, USPubN: 2003/0195959 (hereinafter Labadie), and further in view of Bansal et al., USPubN: 2003/0120593 (hereinafter Bansal)

As per claim 15, Labadie discloses a method for monitoring performance of at least two Java transactions executing in two separate processes and being related to one another as parent-child transactions, comprising instrumenting each of said transactions at run-time by modifying its respective bytecode representation to obtain a selected performance metric corresponding thereto, generating a correlator corresponding to said top-level transaction.

Labadie discloses utilizing RMI (see ORB, para 0028, pg. 3) to send said top-level correlator incorporated in a header of an IIOP message to said child transaction, and generator another correlator corresponding to said child transaction (Fig. 5A-B; *header* - para 0064-0066, pg. 6); but does not teach RMI over IIOP. The use of message over IIOP in a J2EE based network is taught by Bansal (Fig. 23) who also teaches using of ARM to instrument and measure application data for performance reporting (see para 0922-0969, pg. 38-40). Since Labadie is also suggesting performance analysis in a similar context where message containing correlator data are passed in a interoperability Enterprise Java network (para 0026, pg. 3), it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a layer of IIOP as in Bansal's message passing above among the ORB layer pertinent to this J2EE paradigm in order for Labadie's RMI invocation (over ORB) or correlator record passing to benefit of the core service of the ORB based on IIOP as heterogeneous format data

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can be reconverted from one format into another to fulfill the path of the data being transferred in this enterprise communications means.

As per claims 16-19, these claims include the subject matter of claims 3-5 or 6; hence will incorporate the corresponding rejection as set forth therein, respectively.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen et al, USPN: 6,327,700, disclosing insertion of monitoring instructions in a dynamic assembly code for an ARM API implemented as witness set.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)272-3719.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tuan A Vu', with a long horizontal flourish extending to the right.

Tuan A Vu
Patent Examiner,
Art Unit 2193
September 7, 2006